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April 22, 1996

VIA MESSENGER

RECEIVED
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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

The Honorable William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Room 222
Washington, D.C. 20554

Re: RM No. 8784
Petition for Amendment of the Commission's Rules to establish Requirements for a Global Stratospheric Telecommunications Service in the 47.2 - 47.5 GHz and 47.9 - 48.2 GHz Frequency Bands

Dear Mr: Caton:

On Friday April 19th, representatives of Sky Station International, Inc. ("Sky Station") met with Don Gips, Brian Carter, Jennifer Warren, Cecily Holiday, Karl Kensinger, Damon Ladson and Jennifer Constock to discuss the proposal for a new Global Stratospheric Telecommunications Service using spectrum in the 47 GHz band. The discussion focused on the issues outlined Sky Station's filing in the above-referenced proceeding as well as in the attached materials which were provided during the presentation. Please associate these materials with the above-referenced proceeding.

Any questions concerning this matter should be addressed to Paul Mahon of Mahon & Patusky at (202) 483-4000 or the undersigned.

Sincerely,

Lee J. Tiedrich

Attachment

cc: Donald Gips, Brian Carter, Jennifer Warren, Cecily Holiday, Karl Kensinger, Damon Ladson, Jennifer Constock

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List ABCDE

Sky Station International Inc.

Regulatory Briefing

Service Definition

Regulatory
Briefing
1 of 20

GSTS:
Global Stratospheric Telecommunications Service

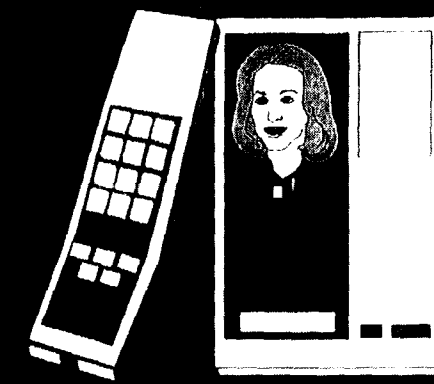
Stratospheric Station – A *station* located at a fixed position in the stratosphere

[illegible]

[illegible] maintenance approximately [illegible] miles above the earth [illegible] of the [illegible] atmosphere

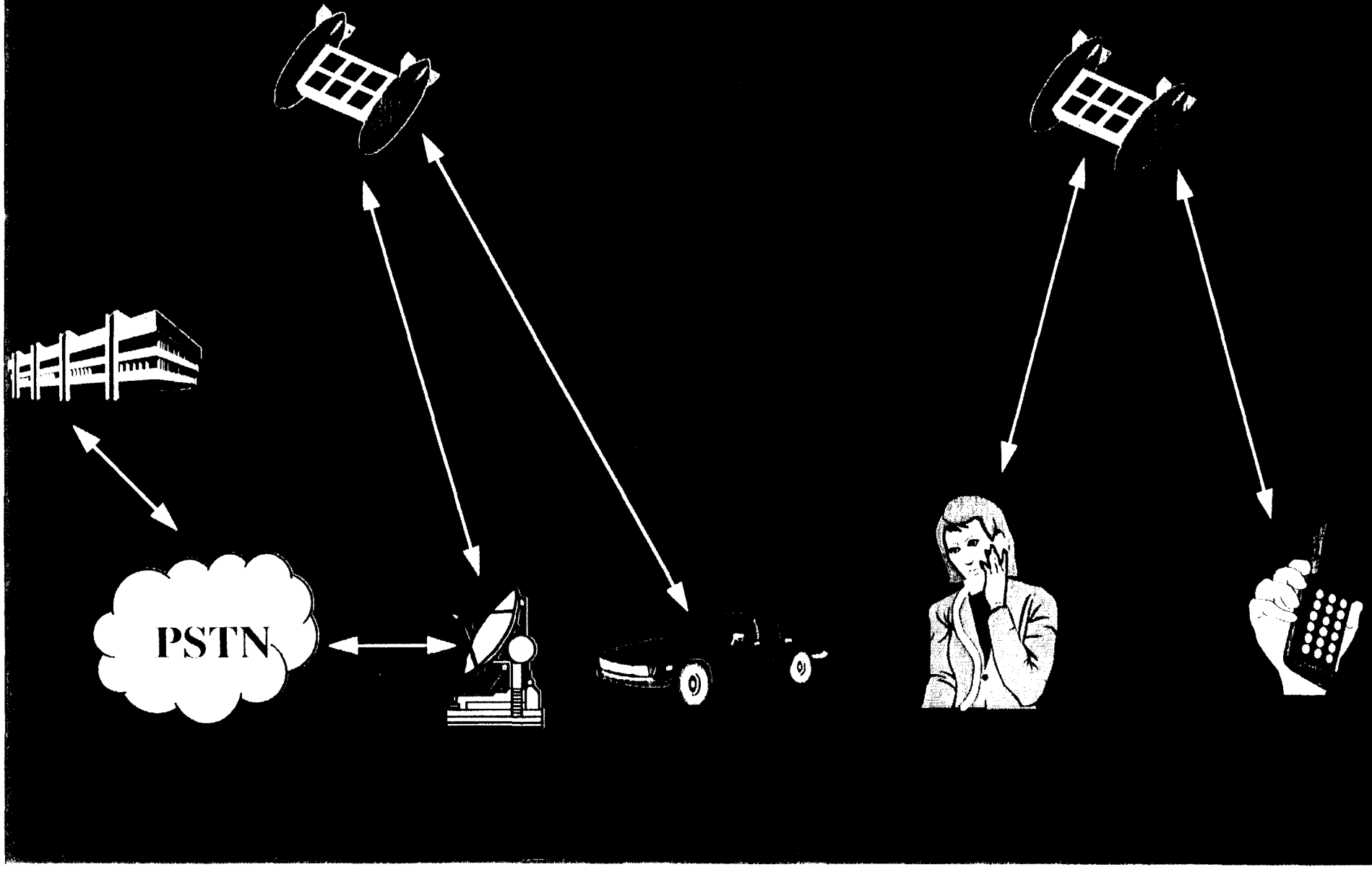
GSTS Applications

Global and fully portable 10¢/minute picturephone service, with capacity for > 1 billion users.



Global and fully portable 10¢/minute wireless world wide web connectivity, with capacity for > 1 billion users

GSTS Schematic



Markets and Competition Matrix

Regulatory Briefing 5 of 20

Mobility

Cost to user	High	Medium	Low	Global Coverage
High	LEO MSS (eg Iridium)		Ka-Band (eg Teledesic)	all Geography
Medium		GSTS (eg Sky Station)		all People
Low	Cellular & PCS (eg Sprint Spectrum)		Fiber Optic (eg Cable)	all Cities

Bandwidth to user

Low Medium High

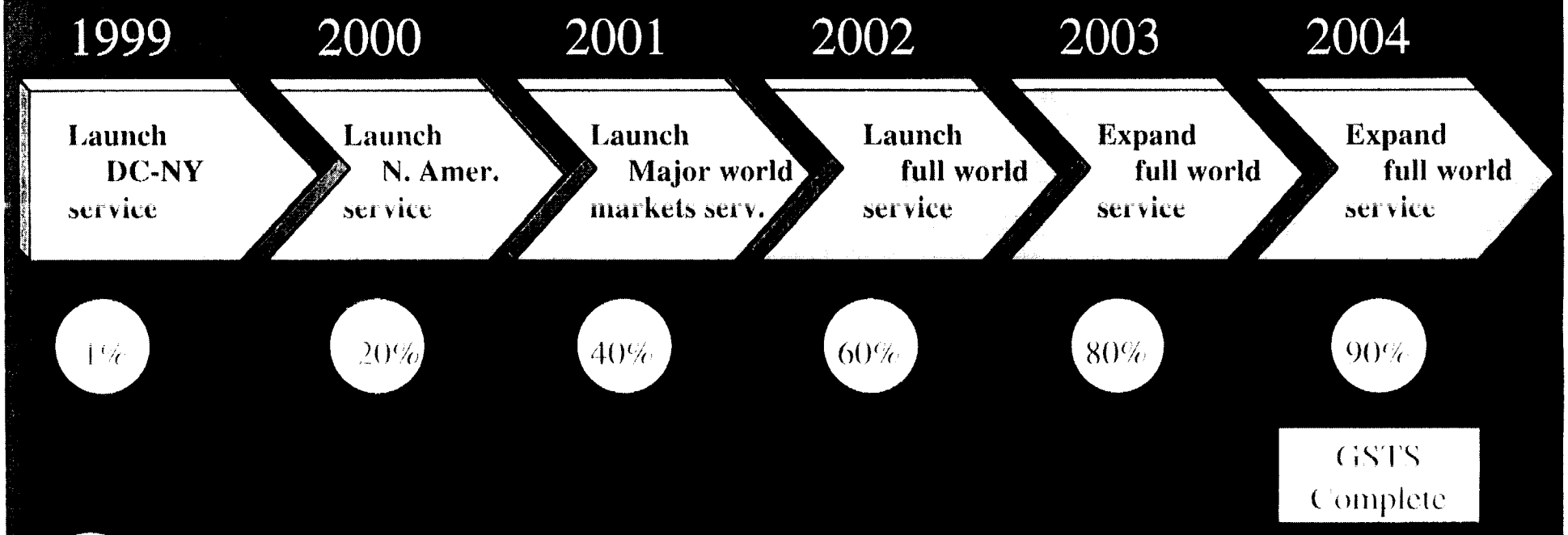
GSTS Billion Person Capacity for Broadband Portable Service

- 300 times user bandwidth (2,100 cells divided by 7 times reuse), divided by 70 KHz.
- At Bandwidth limit, assuming 50% used for base station and 9% guardband width
- 300 * 140 MHz/70 KHz = 600,000 Simultaneous Users = 6,000,000 Subscribers at 0.1 Erlang
- Nominally, Platform Capacity times 250 = 1.5 Billion Subscribers Worldwide.

Why Sky Stations Now?

- Stratospheric Platforms are old idea.
- New technology, using GPS, makes geostationary (Fixed location over earth) platforms practical
- New composite materials and electronics make long duration (10 years) and high capacity communications practical.
- Concepts like Iridium and Teledesic validated the Global Wireless market.

Sky Station International Inc. (SSI) Schedule



Coverage of world's population

GSTS Spectrum Requirements

47.2 - 47.5 GHz (Earth-to-Stratosphere)
47.9 - 48.2 GHz (Stratosphere-to-Earth)

Current Allocation: 47.2 - 50.2 GHz is allocated to Fixed, Mobile, Fixed Satellite (Earth-to-Space)

Proposed FCC Allocation: 47.2 - 48.2 GHz should be limited to licensed millimeter wave services

Our Proposal:

1. **Revise footnotes 901 and US297 to limit use of required sub-bands to GSTS**
2. **Create rules for a GSTS**

Frequency Allocation

GHz 47.2 - 50.2 International Allocation to Services

Region 1	Region 2	Region 3
47.2 - 50.2 FIXED FIXED-SATELLITE (Earth-to-space) 901 MOBILE 905 904		

GHz 47.2 - 50.2 United States Allocation to Services

Government Allocation	Non-Government Allocation
FIXED FIXED-SATELLITE (Earth-to-space) MOBILE US264, US297, 904	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE US264, US297, 904

Footnote 901 Language

"The allocation of the spectrum for the fixed-satellite service in the bands 42.5 - 43.5 GHz and 47.2 - 50.2 GHz for earth-to-space transmission is greater than that in the band 37.5 - 39.5 GHz for space-to-earth transmission in order to accomodate feeder links to broadcasting satellites. Administrations are urged to take all practical steps to reserve the band 47.2 - 49.2 GHz for feeder links for the broadcasting satellite service operating in the band 40.5 - 42.5 GHz".

Proposed Revised Footnote 901 Language

"Use of the bands 47.2 - 47.5 GHz (Earth-to- stratosphere) and 47.9 - 48.2 GHz (stratosphere-to-earth) by the fixed service and by the mobile service is limited to global stratospheric telecommunications service. Stations in the fixed-satellite service may be operated subject to not causing harmful interference to the global stratospheric telecommunications service.

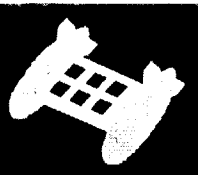
. . .

Administrations are urged to take all practical steps to reserve the band 47.5 - 47.9 GHz and 48.2 - 49.2 GHz for feeder links for the broadcasting-satellite service operating in the band 40.5 - 42.5 GHz."

Footnote US297 Language

Current: "The bands 47.2 - 49.2 GHz and 74.0 - 75.5 GHz are also available for feeder links for the broadcasting-satellite service."

Proposed: "Use of the bands 47.2 - 47.5 GHz (Earth-to-stratosphere) and 47.9 - 48.2 GHz (Stratosphere-to-earth) by the fixed service and by the mobile service is limited to global stratospheric telecommunications service. The bands 47.2 - 47.5 GHz, 47.5 - 47.9 GHz, 48.2 - 49.2 GHz and 74.0 - 75.5 GHz are also available for feeder links for the broadcasting-satellite service."

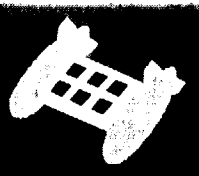


Why 47.2 - 47.5 GHz & 47.9 - 48.2 GHz ?

- 300 MHz in each direction is needed for a non-mutually exclusive billion person mass-access (10¢/minute) service.
- Very high elevation angles of GSTS are compatible with the severe losses of the millimeter band.
- Least congested non-government band allocated to fixed and mobile service.
- Only impact is to reduce an unused FSS and BSS feeder-link band from 2000 MHz bandwidth to 1400 MHz bandwidth.

Proposed Rules for GSTS

- All technically, financially and legally qualified applicants authorized to launch with 300+300 MHz, but to power only a pro rata percentage of the bandwidth, after international coordination.
- Failure to meet construction and launch milestones forfeits bandwidth back to spectrum assignment pool.
- No mutual exclusivity.



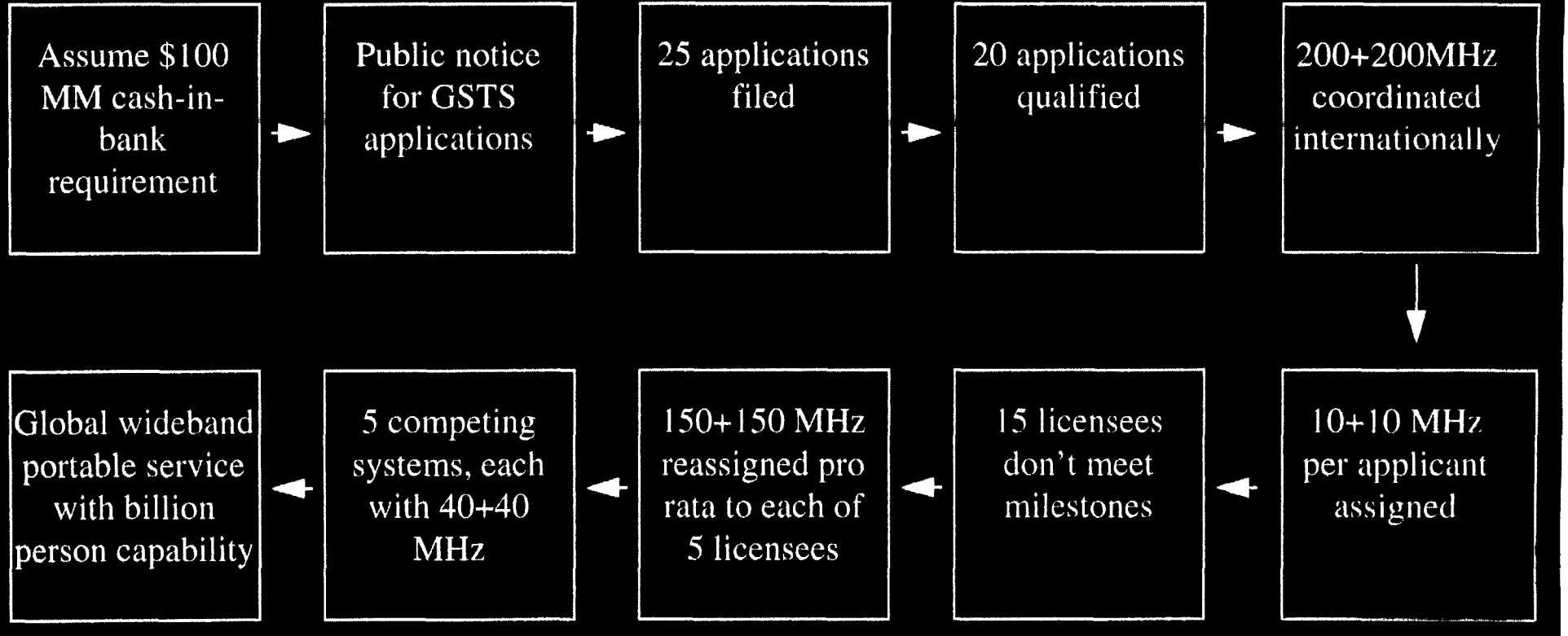
Proposed Technical Qualifications

- Documentation of GSTS technology (e.g., ability to remain geostationary)
- Ability to provide coverage to at least 80% of world's population
- Engineering certifications

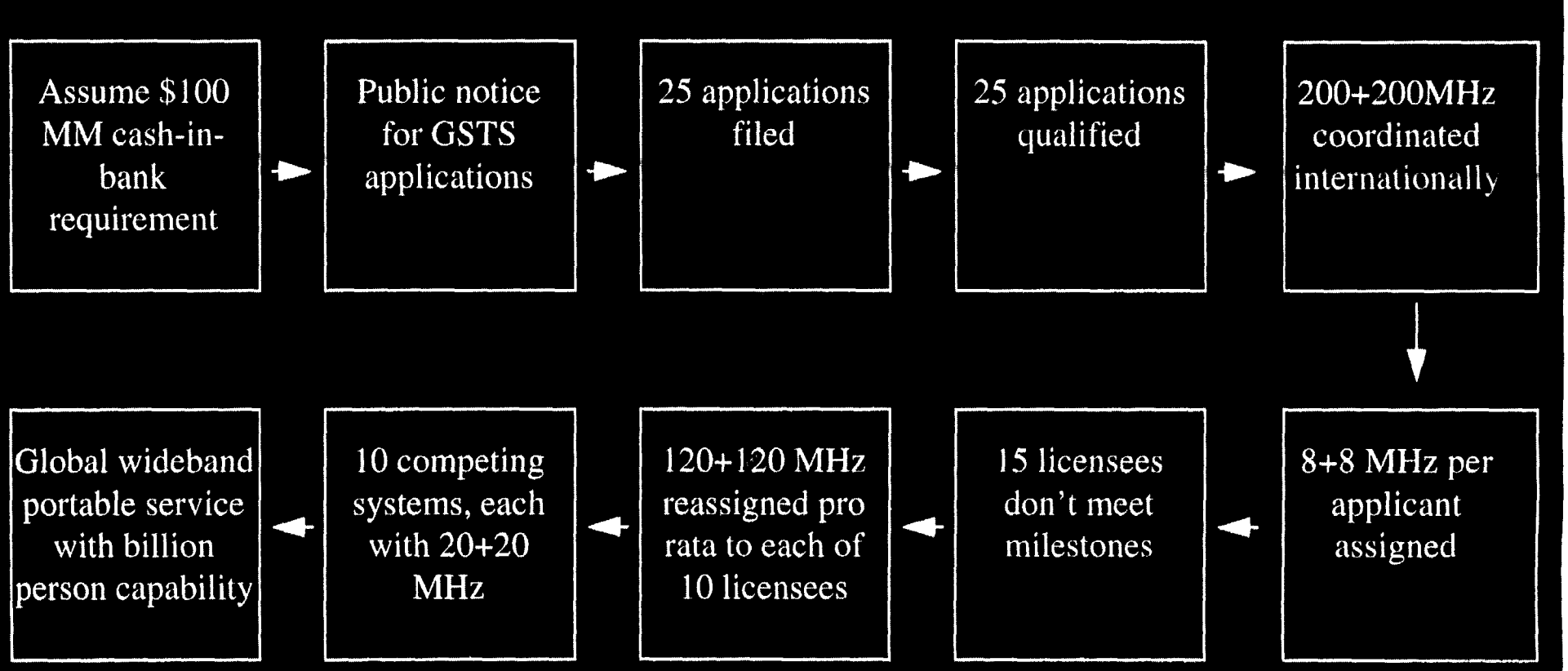
Proposed Legal/Financial Qualifications

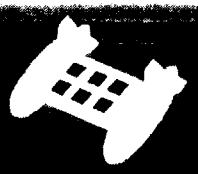
- Cash in bank for first n sky stations.
- Meet foreign ownership limitations.
- Agreement to international coordination and national authorization constraints.

Example of Non-Exclusive Licensing Process



Example of Non-Exclusive Licensing Process





Requested Government Actions

- Get GSTS definitions and revision of footnote 901 on the agenda for WRC-97.
- Issue NPRM to establish rules for a non-MX GSTS in the existing fixed/mobile allocation at 47 GHz, including revision of footnote US297.
- Authorize Sky Station International, Inc. to start constructing and operating a GSTS at its own risk (Experimental service in the DC-NY corridor).